

## STATEMENT OF BASIS

**Applicant:** Town of Long Lake  
**Permit Number:** SD0020915  
**Contact Person:** Sonja Klebs, Town President  
Don Pudwill, Town Maintenance  
P.O. Box 252  
Leola, SD 57456  
**Phone:** (605) 577-6555  
**Permit Type:** Minor Municipal - Renewal

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This document is intended to explain the basis for the requirements contained in the proposed Surface Water Discharge Permit. This document provides guidance to aid in complying with the permit regulations. This guidance is not a substitute for reading the proposed permit and understanding its requirements.

### DESCRIPTION

The town of Long Lake operates a wastewater treatment facility located southwest of the town in the Southwest ¼ of the Southeast ¼ of Section 31, Township 128 North, Range 69 West, in McPherson County, South Dakota (Latitude 45.853986°, Longitude -99.210452°, Navigational Quality GPS).

The wastewater treatment facility consists of a gravity flow collection system which flows wastewater to a one-cell stabilization pond system. The facility began operation in 1960 and was upgraded in 1991 with the addition of a valve-control discharge structure located on the southeast corner of the pond. The discharge valve became stuck open in 2010 and was repaired in 2011.

The town of Long Lake's single cell WWTF does not meet the secondary treatment standards. Therefore, the town would need to upgrade its WWTF to meet the secondary treatment standards or operate as a total retention system. The town is expected to have no problems maintaining total retention; therefore the town will be issued an individual No Discharge Permit.

This wastewater treatment facility serves a population of 31 persons (2010 census), with no known industrial users contributing flow to the system.

### RECEIVING WATERS

Any discharge from this facility will enter an unnamed natural slough which is classified by the South Dakota Surface Water Quality Standards (SDSWQS), Administrative Rules of South Dakota (ARSD), Sections 74:51:01:11 and 74:51:02:01 for the following beneficial uses:

- (9) Fish and wildlife propagation, recreation, and stock watering waters.

## TOTAL MAXIMUM DAILY LOAD

Section 303(d) of the federal Clean Water Act requires states to develop Total Maximum Daily Loads (TMDLs) for waters at levels necessary to achieve and maintain water quality standards. TMDLs are calculations of the amount of pollution a waterbody can receive and still maintain applicable water quality standards. TMDLs are necessary for waters that do not meet or are not expected to meet water quality standards with the application of technology-based controls for point sources. TMDLs address specific waterbodies, segments of waterbodies, or even entire watersheds, and are pollutant specific. TMDLs must allow for seasonal variations and a margin of safety, which accounts for any lack of knowledge concerning the relationship between pollutant loads and water quality.

This segment of the receiving waterbody is not listed as being impaired. Therefore, a TMDL is not needed.

## ANTIDEGRADATION

SDDENR has fulfilled the antidegradation review requirements for this permit. In accordance with South Dakota's Antidegradation Implementation Procedure and the SDSWQS, no further review is required. The results of SDDENR's review are included in Attachment 1.

## MONITORING DATA

The town's current permit does not authorize routine discharges. During the permit cycle, the town has had 3 emergency discharges due to wet weather and a leaking discharge valve. The town has fixed the leaking discharge valve and future discharges are not expected. The sample results are included in Attachment 2.

## INSPECTIONS

Personnel from SDDENR conducted a *Compliance Inspection* of the Long Lake wastewater treatment facility on August 15, 2012.

The following comments and corrective actions were ***required*** and are items that will improve the operation of the facility.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The operator reported that there was a backup into a home and a portion of sewer main had to be replaced to solve the problem. SDDENR was not notified of the sewer backup.	All discharge and/or overflows, including sewer back-ups must be monitored, reported, and sampled according to the requirements in your SWD permit.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The operator did not have a copy of the permit for the inspection.	In accordance with Part 2.10 of the permit, a copy of the SWD permit must be kept on-site so that the operator is aware of permit conditions.  <i>A copy of the permit was given to Mr. Pudwill during the inspection.</i>
The operator expressed interest in transferring water from the adjoining natural slough to the wastewater treatment facility to keep the water levels above the minimum operating level.	Prior to transferring the water to the lagoon, the facility will be required to obtain a water right from SDDENR's Water Rights Program. For more information contact the Water Rights Program at (605) 773-3352.

The following comments and corrective actions were ***recommended*** and are items that will improve the operation of your facility.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
The town does not collect sewer use fees. To effectively operate the wastewater system, the annual wastewater revenues must meet or exceed the annual wastewater expenses.  <i>This was mentioned in the previous inspection report.</i>	Several communities are facing upgrades, rehabilitation, or new construction. The costs of these projects are typically very large and cannot be accomplished without the community leaders having the foresight to set appropriate wastewater rates to cover these costs as well as the operation and maintenance costs. The community needs to develop sewer use fees to cover these costs. Financial and technical assistance to undertake a rate analysis may be available through the department or your local planning district. Contact the Water Resources Assistance Program at (605) 773-4216 or your local planning district for further information.
The town has not tested the collection system to determine if there is excessive inflow and infiltration (I/I).	The town should take steps to identify and eliminate inflow and infiltration into the collection system. These excess inflows into the system can contribute in unauthorized discharges from the collection system and the treatment facility.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
<p>The dikes are showing signs of erosion.</p> <p><i>This was mentioned in the previous inspection report.</i></p>	<p>The pond should be riprapped to stop the erosion caused by high water and wind/wave action. If not corrected, this erosion may cause operation and maintenance problems and result in major repair expenses. Please see enclosed sheet on riprapping.</p>
<p>The stabilization pond does not have a depth indicator. One has been built for the facility, but has yet to be installed.</p> <p><i>A similar comment was made in the previous inspection report.</i></p>	<p>A pond depth indicator should be installed in the stabilization pond, with readings recorded during each inspection. These records will be helpful in determining flow to the ponds and aid in maintaining the proper operating depths in the ponds at all times.</p>
<p>There is some weed growth on the dikes.</p>	<p>This unwanted vegetation needs to be eliminated to prevent dike damage from erosion and the root systems of these plants. This vegetation also tends to inhibit the air action on the pond, which in turn inhibits the biological action necessary to treat the wastes and keep odors to a minimum. Once the weeds are eliminated, the pond site should be reseeded with an appropriate grass.</p>
<p>The operator mentioned that muskrats have caused problems for the facility. The town has been trying to eliminate the muskrats.</p> <p><i>A similar comment was made in the previous inspection report.</i></p>	<p>Burrowing rodents can do extensive damage in just a short period of time resulting in both operation and maintenance problems, and a major expense to the city for repairs. Continue your efforts at eliminating the muskrats from your facility. Contact your local Game, Fish, and Parks conservation officer for additional information on how to remove rodents from the stabilization pond area.</p>
<p>We would like to encourage you to give Mr. Pudwill or another representative of Long Lake the opportunity to attend the wastewater training courses sponsored by the state to upgrade skills and share knowledge concerning the operation and maintenance of municipal wastewater systems.</p>	<p>For more information as to dates and locations of upcoming courses in your area, contact South Dakota Association of Rural Water Systems, under contract with DENR, at 203 Center Street W., Madison, SD 57042. Phone: (605) 556-7219. Website: <a href="http://www.sdarws.com">http://www.sdarws.com</a>.</p>

## EFFLUENT LIMITS

There shall be **no discharge** from this facility except in accordance with the emergency release, bypass, or sanitary sewer overflow provisions of the permit. Knowingly discharging without following the emergency release, bypass, or sanitary sewer overflow provisions of the permit could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act. A no discharge permit is issued to facilities that are expected to be able to maintain total retention. The no discharge requirement is based on Best Professional Judgment (BPJ) and the facility not being able to provide secondary treatment.

## SELF MONITORING REQUIREMENTS

Promptly upon discovery of an emergency bypass, sanitary sewer overflow, or other discharge, the discharge shall be monitored as shown below. Failing to report a discharge within a reasonable time from the permittee first learning of a discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act.

Effluent Characteristic	Frequency	Reporting Value	Sample Type <sup>1</sup>
Total Flow, million gallons	Each Discharge <sup>2</sup>	Event Total	Calculated
Duration of Discharge, days	Each Discharge <sup>2</sup>	Event Total	Calculated
Flow Rate, million gallons per day	Daily <sup>3</sup>	Actual Value	Instantaneous
pH, standard units	Daily <sup>3,4</sup>	Actual Value	Instantaneous <sup>5</sup>
Water Temperature, °C	Daily <sup>3,4</sup>	Actual Value	Instantaneous <sup>6</sup>
Total Suspended Solids (TSS), mg/L	Daily <sup>3</sup>	Actual Value	Grab
Five-Day Biochemical Oxygen Demand (BOD <sub>5</sub> ), mg/L	Daily <sup>3</sup>	Actual Value	Grab
Ammonia as N, mg/L	Daily <sup>3,4</sup>	Actual Value	Grab
<i>Escherichia Coli</i> , no./100 mL	Daily <sup>3</sup>	Actual Value	Grab
Total Coliform, no./100 mL	Daily <sup>3</sup>	Actual Value	Grab

<sup>1</sup> See Definitions.

<sup>2</sup> The permittee shall report the date and time of the start and termination of each discharge, along with the total number of gallons discharged during the entire discharge event.

<sup>3</sup> The permittee shall take a minimum of one sample per day during any emergency release, bypass, sanitary sewer overflow, or other discharge unless SDDENR authorizes an alternative sampling schedule.

<sup>4</sup> The pH and temperature of the effluent shall be determined when ammonia samples are collected.

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- <sup>5</sup> The pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.
- <sup>6</sup> The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

Monitoring results shall be reported on a photocopy of the Emergency Release Reporting Form located in **Appendix A** of this permit, and postmarked no later than the 28<sup>th</sup> day of the month following the emergency discharge, sanitary sewer overflow, or unauthorized release.

Monitoring shall consist of **monthly** inspections of the facility and the outfall to verify that proper operation and maintenance procedures are being practiced and whether or not there is a discharge occurring from this facility. **Daily** inspections are required during a discharge. Documentation of each of these visits shall be kept in a notebook to be reviewed by SDDENR or EPA personnel when an inspection occurs.

## **WHOLE EFFLUENT TOXICITY (WET) MONITORING**

The proposed permit will not include Whole Effluent Toxicity (WET) monitoring or limits. SDDENR has determined that due to the facility's no discharge status, the lack of industrial contributions to the wastewater treatment facility, and the minimum fishery beneficial use of the receiving stream there is no reasonable potential for whole effluent toxicity. SDDENR has the authority to reopen the permit if necessary to add WET effluent limits (and compliance schedules, if necessary), monitoring, or other appropriate requirements.

## **SLUDGE**

Based on the town of Long Lake's permit application, SDDENR does not anticipate sludge will be removed or disposed of during the life of the permit. Therefore, the proposed Surface Water Discharge permit shall not contain sludge disposal requirements. However, if sludge disposal is necessary, the town of Long Lake is required to submit to SDDENR a sludge disposal plan for review and approval **prior** to the removal and disposal of sludge.

## **DRAINAGE ISSUES**

McPherson County has the authority to regulate drainage. The town of Long Lake is responsible for getting any necessary drainage permits from the county **prior** to discharging.

## **ENDANGERED SPECIES**

This is a renewal of an existing permit. No listed endangered species are expected to be impacted by activities related to this permit. However, the table below shows the species that may be present in the town of Long Lake's geographic area.

COUNTY	GROUP	SPECIES	CERTAINTY OF OCCURRENCE
MCPHERSON	BIRD	CRANE, WHOOPING	KNOWN

This information was accessible at the following US Fish and Wildlife Service website as of September 18, 2012: <http://www.fws.gov/southdakotafieldoffice/SpeciesByCounty.pdf>.

#### **PERMIT EXPIRATION**

A five-year permit is recommended.

#### **PERMIT CONTACT**

Any questions pertaining to this statement of basis can be directed to Tina Piroutek, Engineer II for the Surface Water Quality Program, at (605) 773-3351.

September 18, 2012

# **ATTACHMENT 1**

## **Antidegradation Review**

Permit Type: Minor Municipal - Renewal Applicant: Town of Long Lake  
Date Received: December 22, 2010 Permit #: SD0020915  
County: McPherson Legal Description: SW ¼ of SE ¼ of Sec 31, T128N, R69W  
Receiving Stream: Unnamed Slough Classification: 9,10  
If the discharge affects a downstream waterbody with a higher use classification, list its name and uses: None

## APPLICABILITY

1. Is the permit or the stream segment exempt from the antidegradation review process under ARSD 74:51:01? Yes ☒ No ☐ If no, go to question #2. If yes, check those reasons why the review is not required:
- ☐ Existing facility covered under a surface water discharge permit is operating at or below design flows and pollutant loadings;
  - ☐ \*Existing effluent quality from a surface water discharge permitted facility is in compliance with all discharge permit limits;
  - ☐ \*Existing surface water discharge permittee was discharging to the current stream segment prior to March 27, 1973, and the quality and quantity of the discharge has not degraded the water quality of that segment as it existed on March 27, 1973;
  - ☐ \*The existing surface water discharge permittee, with DENR approval, has upgraded or built new wastewater treatment facilities between March 27, 1973, and July 1, 1988;
  - ☐ The existing surface water discharge permittee discharges to a receiving water assigned only the beneficial uses of (9) and (10); the discharge is not expected to contain toxic pollutants in concentrations that may cause an impact to the receiving stream; and DENR has documented that the stream cannot attain a higher use classification. This exemption does not apply to discharges that may cause impacts to downstream segments that are of higher quality;
  - ☐ Receiving water meets Tier 1 waters criteria. Any permitted discharge must meet water quality standards;
  - ☐ The permitted discharge will be authorized by a Section 404 Corps of Engineers Permit, will undergo a similar review process in the issuance of that permit, and will be issued a 401 certification by the department, indicating compliance with the state's antidegradation provisions; or
  - ☒ Other: This permit does not authorize a discharge, except in accordance with the emergency release or bypass provisions.

\*An antidegradation review is not required where the proposal is to maintain or improve the existing effluent levels and conditions. Proposals for increased effluent levels, in these categories of activities are subject to review.

**No further review required.**

## ANTIDEGRADATION REVIEW SUMMARY

2. The outcome of the review is:
- ☒ A formal antidegradation review was not required for reasons stated in this worksheet. Any permitted discharge must ensure water quality standards will not be violated.
  - ☐ The review has determined that degradation of water quality should not be allowed. Any permitted discharge would have to meet effluent limits or conditions that would not result in any degradation estimated through appropriate modeling techniques based on ambient water quality in the receiving stream, or pursue an alternative to discharging to the waterbody.
  - ☐ The review has determined that the discharge will cause an insignificant change in water quality in the receiving stream. The appropriate agency may proceed with permit issuance with the appropriate conditions to ensure water quality standards are met.
  - ☐ The review has determined, with public input, that the permitted discharge is allowed to discharge effluent at concentrations determined through a total maximum daily load (TMDL). The TMDL will determine the appropriate effluent limits based on the upstream ambient water quality and the water quality standard(s) of the receiving stream.
  - ☐ The review has determined that the discharge is allowed. However, the full assimilative capacity of the receiving stream cannot be used in developing the permit effluent limits or conditions. In this case, a TMDL must be completed based on the upstream ambient water quality and the assimilative capacity allowed by the antidegradation review.
  - ☐ Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Describe any other requirements to implement antidegradation or any special conditions That are required as a result of this antidegradation review: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tina Piroutek  
Reviewer

September 18, 2012  
Date

Kelli D. Buscher, P.E.  
Team Leader

September 18, 2012  
Date

# **ATTACHMENT 2**

## **Monitoring Data**

NS is No Sample. No sample is available for these parameters.

**Violations are bolded, shaded, and larger font.**

Emergency Discharge 1: (June 15-20, 2010)

Parameter	Sample 1	Sample 2	Sample 3
Date	06/15/2010	06/16/2010	06/17/2010
Time	2:15 PM	11:00 AM	11:00 AM
Flow Rate, MGD	NS	NS	NS
pH, su	8.54	7.69	7.6
Temperature, °C	21.7	17.8	17.6
Fecal Coliform, no./100 mL	NS	NS	NS
Ammonia, mg/L	NS	NS	NS
TSS, mg/L	86	9	3
BOD <sub>5</sub> , mg/L	10	2	5

Emergency Discharge 2: (July 21, 2010)

Parameter	Sample 1
Date	07/21/2010
Time	4:20 PM
Flow Rate, MGD	0.000024
pH, su	6.97
Temperature, °C	16
Fecal Coliform, no./100 mL	NS
Ammonia, mg/L	NS
TSS, mg/L	3
BOD <sub>5</sub> , mg/L	2

Emergency Discharge 3 (July 11-13, 2011)

Parameter	Sample 1	Sample 2
Date	07/11/2011	07/12/2011
Time	4:24 PM	11:30 PM
Flow Rate, MGD	0.049	0.049
pH, su	7.77	7.13
Temperature, °C	15	15
Fecal Coliform, no./100 mL	33	190
Ammonia, mg/L	0.11	0.19
TSS, mg/L	6	3
BOD <sub>5</sub> , mg/L	2	2